

REMARKS

Entry of the foregoing, re-examination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.116, and in light of the remarks which follow, are respectfully requested.

Claim 8 has been amended to further distinguish over the products of the cited art. Claims 8 and 11-15 remain pending in this application with claims 11-15 being withdrawn from consideration on the merits.

Claim 8 was finally rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,475,075 (Brant et al) and as anticipated by U.S. Patent No. 6,444,773 (Markel). The Examiner's rationale is set forth in paragraph (5) of the Office Action.

According to the rejection, Brant et al '075 discloses α -olefins of up to C_{100} as suitable comonomers for copolymerization with ethylene. The molecular weight of a C_{100} α -olefin is 1,400 (i.e., 14×100). Claim 8 has now been amended to exclude the C_{100} α -olefin comonomer disclosed in this document. Accordingly, the §102(b) rejection over Brant et al '075 has been obviated and should be withdrawn.

Markel '773 discloses and claims "(a) vinyl ended olefin copolymer chains having a number average molecular weight (M_n) of about 1500 to 25,154 . . . wherein M_w/M_n ranges from 2.083 to 5.666." (Claim 1). From this, the minimum M_w of the vinyl ended olefin copolymer is about 3,100 (i.e., 1500×2.083). Claim 8 has now been amended to exclude the minimum M_w disclosed by Markel '773. Accordingly, the §102(b) rejection over this document has been obviated and should be withdrawn.

The Office Action concludes on page 4 thereof that the Matsuo Declaration initially filed September 28, 2004 fails to show unexpected results because the

claims are directed to a macromer rather than a branched polymer prepared from the macromer. However, the claims relate to a branched polymer having recurring units derived from a novel, specific macromer. In addition, the branched polymer of the invention comprises long chain branches having sufficient length derived from the specific macromer in sufficient amount.

The macromers disclosed in Brant et al '075 are insufficient regarding length of long chain branch, since the Mw of the macromers of this document are lower than that now defined in the present invention. The macromers disclosed in Markel '773 are insufficient in copolymerizability, and hence, it is difficult for these monomers to be incorporated into the polymer. The declaration demonstrated this fact.

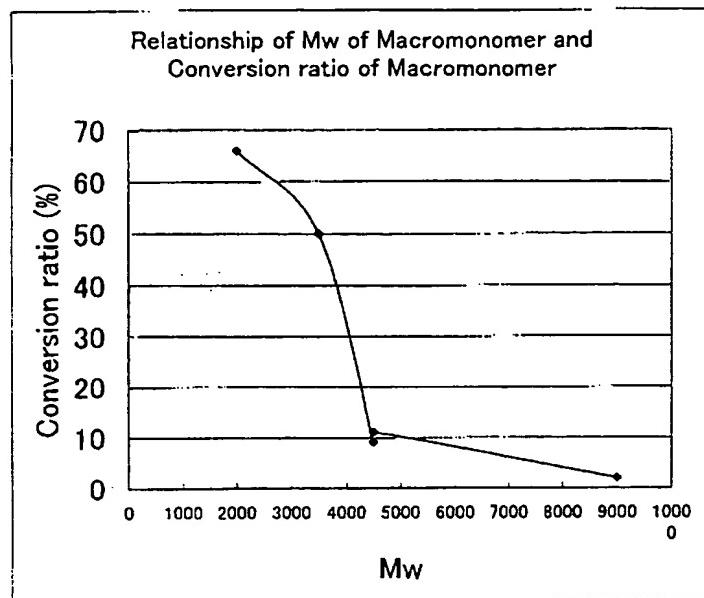
Data shown in the declaration is reproduced below.

	Weight average molecular weight of macromonomer	Weight ratio	Conversion ratio of macromonomer to the branched polyolefin (%) (1)
		Macromonomer/branched polyolefin	
Inv. Exp. 1	2000	1/2	66
Add. Exp. 1	3500	1/1	50
Add. Exp. 2	4500	10/1	9
Add. Exp. 3	4500	8/1	11
Add. Exp. 4	9000	50/1	2

(1) Calculated based on

$$\frac{\text{Branched PO} \times 100}{\text{unreacted Monomer} + \text{Branched PO}}$$

The results are plotted as follows.



As can be seen from the above, a Mw of about 3100 is critical to obtain a branched polymer comprising long chain branches having sufficient length in sufficient amount.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (703) 838-6613.

Respectfully submitted,

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